Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

species, a large proportion of which are common in our waters. This work, with the catalogue noted above, will go far to render easier the systematic study of the diatoms.——Professor C. H. Peck re-describes, in the January *Torrey Bulletin*, a curious fungus, *Secotium Warnei*, which constitutes "a connecting link between the Hymenomycetous Agaricini, and the Gasteromycetous Trichogasters." The close resemblance of some of the stipitate forms to an unexpanded Agaric was, in specimens from Iowa, quite remarkable, and the writer of this note was for a time puzzled to determine whether it might not be an Agaric after all.——The Forestry Bulletins issued from the Census Office, and prepared by Professor Sargent, are of great interest and value to botanists. When the series of bulletins is completed we shall have a most excellent and reliable map of the forest distribution of the United States.——Wiley & Sons, of New York, have, at the request of some of their patrons, reprinted the edition of "Lindley's Horticulture," which they brought out many years ago, and which had long been out of print. We are glad to see the old book again, and hope that ere long it may be honored with a revision, bringing it up to the present status of vegetable physiology.

ZOÖLOGY.

THE CELL-PARASITE OF THE FROG.—The *Revue Scientifique*, of January 28, 1882, contains an abstract of the discovery by Dr. Gaule, in the frog's red blood corpuscle, of certain bodies which he considers to be derived, under certain circumstances, from the protoplasm of those corpuscles. On treating the red corpuscles with a solution of six per cent. of chloride of sodium, there appeared, beside the nucleus, mobile corpuscles, elongate and pointed at the extremities. These issued from the cell, which they could drag after them for some time, but after a little while became motionless, and finally died and disappeared.

These mobile particles are not met with in all frogs, the season, locality, size, and general state of the animal seeming to have considerable influence on their production, which is most abundant in the season when the frog takes no food, and depends for sustenance upon the reserves stored up in the season of activity. In the cells of such organs as the spleen, the liver, and the marrow of the bones, these particles develop at the expense of the red blood corpuscles more easily and quickly than in the blood itself, and they are more readily obtainable from the spleen than from any other organ. The addition of the saline solution to the sugar of that organ, without the application of heat, caused them to appear. When the violet of gentian was added to the solution only these bodies and the nucleus were colored and this fact led Gaule to suspect that they were derivatives of the nucleus.

In a last series of observations, Dr. Gaule experimented on tissues taken from the living animal. When these were treated with a solution of corrosive sublimate or of nitric acid of three per cent., bodies which he considered identical with those before spoken of were found, like little accessory nuclei, and these behaved with coloring reagents in precisely the same manner as nuclei. Dr. Gaule states that if the cellules of *fresh* tissue are disassociated by means of osmic acid, these bodies do not appear; but if the cellules are dead, these bodies can be preserved in osmic acid.

Dr. Gaule's observations were originally published in two articles in the *Archiv für Physiologie;* the first article without figures, the second illustrated.

He first named the bodies "little worms" *(Würmchen)* but afterwards gave them the title of Cytozoa, and his ultimate conclusion as to their nature was the singular one that they are the *result of death*, one portion of the protoplasm dying, while the other *becomes more active*, frees itself from the dead portion and survives awhile. It is probable that the first name given by Gaule foreshadowed the true nature of these bodies.

Professor E. Ray Lankester (Quar. Jour. Mic. Sci., 1882, 53) considers these bodies to be cell-parasites. He says that in 1871 he described in the same journal certain sausage-like parasites from the blood of *Rana esculenta*, and suggested that they might be connected with the life-cycle of *Trypanosoma sanguinis* (Gruby), at the same time pointing out their resemblance to certain peculiar spores found in cysts of a gregarine parasitic in *Tubifex.*

As Dr. Gaule gave no figures in his first article, it was supposed that he had been studying some of those curious phenomena of disintegrating blood-corpuscles that attract the attention of histologists; but the figures accompanying the second paper showed at once that they were cell-parasites belonging to the Gregarinidæ and identical with the organisms described by Lankester in 1871. Certain Gregarinidæ (Sporozoa) are now known to be cell-parasites during a portion of their lives, and those organisms have of late been considerably studied. One of these sporozoa *(Gregarines velues)* inhabits the sperm polyblasts of the earth-worm. Butschli has shown that sometimes the gregarines of the earth-worm penetrate epithelial cells of the ciliated funnels of the spermatic duct, and will continue attached to the cell by one extremity when they have attained fifty times the linear dimensions of the cell.

Eimer observed oviform psorosperms *(Coccidium* Leuckart*)* in the house-mouse, and Aimée Schneider has discovered in the pseudonaviculæ of *Monocystis lumbrici* and other gregarines falciform corpuscles resembling those figured by Gaule. Schneider's observations establish the relationship between these curious bodies, such as Eimer's *Coccidium*, and the typical gregarines.

The bodies found in the frog resemble Eimer's *Coccidium* of the mouse both in form and size; and also bear a close likeness to the falciform corpuscles found in the spores of a gregarine which occurs in the striated muscular fibers of the pig, sheep and man. The cattle plague of 1865 was at one time attributed to this gregarine.

Taking into consideration all these points, Professor Lankester believes the bodies found by Gaule, and afterwards again observed by himself, to be a stage in the life-cycle of a gregarine to which he gives the name of *Drepanidium ranarum.*

Professor Lankester disposes of Gaule's statement that these bodies were formed on the stage of the microscope after the application of the saline solution; as well as of that observer's failure to discover them in living tissue, by showing that it is difficult to see the nucleus in living tissue, so much so that not long ago it was thought that the red blood-corpuscle of the frog contained no nucleus during life. The parasite is difficult to see because its angle of refraction is the same as that of the corpuscle, but it becomes visible *just at the same time and to the same degree* that the nucleus does.

Dr. Gaule's studies, however, establish two facts not before known; these are, 1st, that the parasite is not only found *attached* to the cell, but also *within* it; 2d, that it is capable of active movement by bending and straightening its body; these movements are excited by a heat of 30°–35° C., but are stopped by a heat of 70° C.

The active motions of these bodies, exhibited in cells as well as in fluids; the cessation of these movements at a temperature of 70°; the fact that they are found in some frogs and not in others, as well as at some seasons and not in others; their power to penetrate cells and escape from them; and their presence in *R. temporaria*, as well is *Triton*, sp., all point to their animal nature.

To Gaule's assertion that these bodies did not appear in fresh tissue, Lankester opposes the statement that he obtained them from spleen pulp spread when fresh in osmic acid, and suggests the possibility that the particles treated in this manner by Dr. Gaule were free from the parasite, while those treated otherwise contained them.

VITALITY OF THE MUD PUPPY.—The observations on the Menopoma in your February number, call to mind several instances of its remarkable vitality which have come under my own observation. One specimen, about eighteen inches in length, which had lain on the ground exposed to a summer sun for forty-eight hours, was brought to the museum, and was left lying for a day longer before it was placed in alcohol. The day following, desiring to note a few points of structure, I removed it from the alcohol, in which it had been completely submerged for at least twenty hours, and had no sooner placed it on the table before it began to open its big mouth, vigorously sway its tail to and fro, and give other undoubted signs of vitality.

On another occasion desiring to kill one of these creatures, which had been out of water for a day, I made a little slit in the back, hoping to be able to penetrate between the cervical vertebræ with a stout scalpel, and cut the spinal cord. After several trials, in which I succeeded only in breaking the scalpel, I gave up the attempt; but with all my cutting and pushing, it manifested not the slightest signs of pain or irritation, while if I but touched the tip of its tail with my finger, it would make a vigorous protest by lashing its tail and snapping its jaws. I doubt if even the redoubted snapping-turtle could show signs of a more "rugged" constitution.—*Wm. Frear, University of Lewisburg.*

THE FIRST CALIFORNIAN EEL CAUGHT.—The San Francisco *Chronicle* of February 8th, reports the catching by George Bird of the first eel, resulting from the plant of 12,000 made by the California Fish Commissioners. It was caught on the easterly shore of San Francisco bay, and measured three feet in length.—*R. E. C. Stearns.*

WILD GEESE AS PESTS.—In the latter part of January, the farmers of the Upper San Joaquin valley in California, were fighting the wild geese, which in vast numbers were devastating the grain-fields of that region, pulling up the young wheat by the roots.—*R. E. C. Stearns.*

ZOOLOGICAL NOTES.—The Proceedings of the National Museum contain notes on a collection of fishes from the west coast of Mexico, by D. S. Jordan and C. H. Gilbert, while Mr. T. H. Bean gives a preliminary catalogue of the fishes of Alaska. Mr. C. H. Boyd records the discovery of the remains of a walrus near Addison Point, Washington county, Me., in a bed of blue clay two feet above high water mark. A few years ago a nearly perfect skeleton was found in the marine clays at Portland, Me.——Excellent zoölogical work is now being done in Japan by students educated in the United States and Europe. In the *Quarterly Journal of Microscopical Science* Mr. Mitsukuri recently published an article on the structure of the gills of Lamellibranchs, and in the January number a paper on the development of the supra-renal bodies in Mammalia. In the *Zoölogischer Anzeiger*, January 9, Mr. Jijima gives an abstract of a memoir on the structure of the ovary, and the origin of the egg and the egg-strings in Nephelis, and Mr. T. Iwakawa gives the results of studies on the genesis of the egg in Triton.——A revision of the Crustaceous family *Idoteidæ*, by E. J. Miers, with full descriptions of the species, is published in the Journal of the Linnean Society, XVI.